

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
25 August 2005 (25.08.2005)

PCT

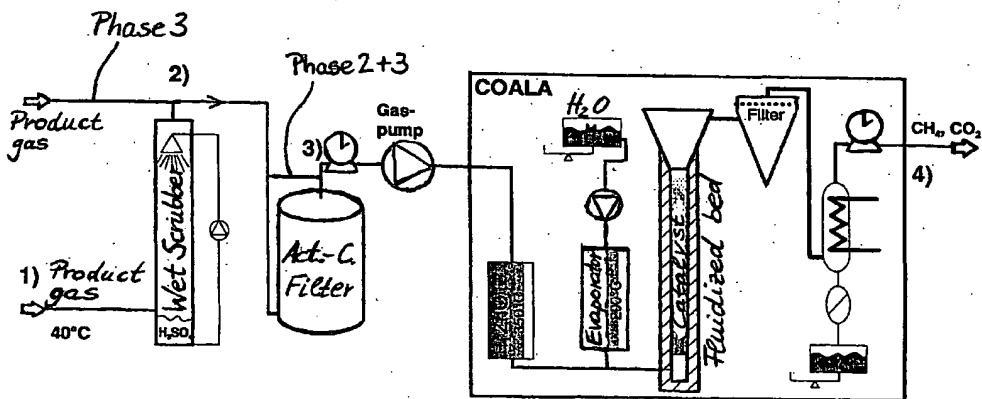
(10) International Publication Number  
**WO 2005/077865 A1**

- (51) International Patent Classification<sup>7</sup>: C07C 1/10, 1/04, 9/04
- (21) International Application Number: PCT/EP2005/000637
- (22) International Filing Date: 24 January 2005 (24.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
04 003 198.1 12 February 2004 (12.02.2004) EP  
04 007 144.1 25 March 2004 (25.03.2004) EP
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

- (54) Title: A PROCESS FOR THE SYNTHETIC GENERATION OF METHANE



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- (57) Abstract: The present invention discloses a process for the synthetic generation of methane from a feed gas mixture comprising carbon monoxide, hydrogen and water vapour and optionally aromatic hydrocarbons; said process comprising the steps of: a) bringing the feed gas mixture in contact with a fluidized bed catalyst having catalyst particles which comprise as catalytic active component a metal and/or a metal compound or a mixture thereof under the circumstances of: b) an elevated temperature in the range of 250 to 500°C; c) a feed gas pressure in the range of 0.8 to 70 bar; d) a gas hourly space velocity of 1000 to 50000 h<sup>-1</sup>; and e) a concentration of H<sub>2</sub>/CO in the initial gas mixture in the range of 0.25 to 5. The afore-mentioned process allows to catalytically convert hydrogen and carbon monoxide effectively in a fluidized bed catalytic reactor which avoids a rapid deactivation of the catalyst material and therefore delivers a high activity of the catalytic active components in the process. Both thermochemical reactions, the endothermic reformation of higher hydrocarbons, i.e. aromatic hydrocarbons, and the exothermic methane generation, proceed simultaneously within the fluidized bed catalytic reactor, leading to an overall enhanced thermal efficiency of the conversion process.